

CHAPTER 8

PAVED SIDE DITCH AND CONCRETE GUTTER

Introduction	<p>Though concrete gutter and paved side ditch is seldom used today, there will still be times when it is necessary. Paved side is usually used where the ditch grade is 3% or more and sometimes on flatter grades where the soils are prone to erosion, such as in sand. The main purpose of paved side ditch is to prevent erosion.</p> <p>This section will cover the different aspects of paved side ditch construction from location to measurement and payment. Refer to standards 607 PSDT-01 through 607 PSDT-06 for paved side ditch and standards 605 GTRC-01 through 605 GTRC -03 for concrete gutter.</p>
Grade Preparation	<p>Most of the principles of grade preparation previously discussed will also apply to paved side ditch construction. The excavation must conform to the size and shape of the bottom of the type of the ditch being built.</p> <p>Compaction should be sufficient to prevent settlement after the paved side ditch is in use. Such settlement causes the ditch to break up and this leads to severe erosion, and this is exactly what we are trying to avoid. Also, any soft or yielding material must be removed and replaced with a suitable material.</p>
Forms	<p>The same requirements for curb forms will also apply to paved side ditch. The forms may be of wood or metal. They must be straight and free of warping. The forms must extend for the full depth of the paved side ditch and secured so that they will maintain the correct grade and alignment.</p>
Concrete Composition Placement	<p>Class A concrete in accordance with section 702 of the standard specifications is used in paved side ditch construction.</p> <p>After the concrete is placed in the forms, it shall be consolidated by tamping, spading, or vibrating. Reinforcing steel should be inserted at this time. Care should be taken that the steel does not rest on the bottom of the grade nor float to the surface.</p>
Cut-off Walls and Lugs	<p>Cut-off walls and lugs are required to keep the paved side ditch in its proper location on a slope. A cut-off wall is constructed at the beginning and end of any paved side ditch. Lugs are poured monolithic with the paved side ditch on steep grades. Be sure to check the standards for the location and spacing of the lugs.</p>

Finishing
And Curing

The concrete is normally struck off with a template cut to resemble the finished grade of the paved side ditch. Floating is accomplished using hand floats or bull floats on larger ditches. Brooming of the surface is **NOT** required on paved side ditches.

Forms should be left in place until the concrete has set sufficiently so that their removal will not cause damage to the paved side ditch.

Curing is required for at least 72 hours after placement by being kept wet and covered with plastic sheeting to hold in the moisture. A liquid membrane curing compound may also be used. If freezing could occur during the curing period, appropriate measures should be taken as previously discussed.

Backfilling around the newly placed concrete shall be done with suitable material in layers of no more than six inches and compacted sufficiently to avoid possibility of erosion.

Construction
& Inspection
Procedures

Paved side ditch should never be placed automatically at the exact location shown in the plans. A visual inspection is required to determine the exact locations. Slight errors in grading or existing conditions varying from the plans can cause major location changes in paved side ditch construction. Be sure to check with your project supervisor/engineer for the correct locations and lengths.

The edges of the paved side ditch should be three to four inches below the adjacent earth so that water can flow into the ditch and not along side of it. Also, the forms have to be removed and sides of the ditch backfilled above the top of the ditch edge so that water will run into the ditch and not along the side where it will erode beneath the ditch. This should be done before any rains occur.

Perform all on-site testing of materials according to the frequency required in the frequency manual and check to see that all materials are approved for use. Secure all required basis for use for the material records.

All items must be measured and documented for payment on a daily basis. These measurements shall be accurate enough for final payment so that additional measurement will not be required at a later date. Make sure and note the standards for how to pay for each lug and cut-off wall.